ATTORNEY DOCKET NO. 08470/007002

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : George William Celniker

Art Unit:

Serial No.: 09/019,465

Examiner:

Filed

: February 5, 1998

Title

: PERFORMING GEOSCIENCE INTERPRETATION WITH SIMULATED

Assistant Commissioner for Patents

Washington, DC 20231

## INFORMATION DISCLOSURE STATEMENT

Applicant submits the references listed on the attached form PTO 1449, copies of which are enclosed.

This statement is being filed before the receipt of a first office action on the merits.

> Date of Deposit I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Respectfully submitted,

Date: 8/28/98

Howard L. Sprigh Reg. No. 37,733

Howard L. Speight Attorney at Law Two Memorial City Plaza 820 Gessner, Suite 1360 Houston, Texas 77024 Telephone: 713/465-1889

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Howard L. Speight Attorney at Law Two Memorial City Plaza 820 Gessner, Suite 1360 Houston, Texas 77024

Telephone: (713) 465~1889 Facsimile: (713) 465~8018

deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

|                      |                    |      |     |      |      |      |       |                     |                                  |   |              | Sheet1                   | (A) o                     | f1            |  |  |
|----------------------|--------------------|------|-----|------|------|------|-------|---------------------|----------------------------------|---|--------------|--------------------------|---------------------------|---------------|--|--|
| SUBSTITL<br>(MODIFIE |                    | RM P | 10- | 144  | 9    |      |       |                     | NT OF COMMERCE<br>ADEMARK OFFICE | ATTY. DOCKET NO.<br>08470/007002  |              | SERIAL NO.<br>09/019,465 |                           |               |  |  |
|                      |                    | STA  | TEM | ENT  | BY   | APP  | LOSU  | NT                  |                                  | APPLICANT<br>George William Celniker  |              |                          |                           |               |  |  |
| (37 CFR              |                    |      | era | il s | heet | ts 1 | it ne | cessary)            |                                  | FILING DATE<br>February 5, 1998   |              | GROUP                    |                           | <del></del> - |  |  |
|                      |                    |      |     |      |      |      |       |                     | U.S. PATEN                       | DOCUMENTS   |              |                          |                           |               |  |  |
| XAMINER<br>NITIAL    | PATENT NUMBER DATE |      |     |      |      |      | ER    |                     |                                  | PATENTEE  | CLASS        | SUBCLASS                 | FILING DATE IF APPROPRIAT |               |  |  |
|                      | AA                 |      |     |      |      |      |       |                     |                                  |   |              |                          |                           |               |  |  |
|                      | AB                 |      |     |      |      |      |       |                     |                                  |   |              |                          |                           |               |  |  |
|                      | AC                 |      |     |      |      |      |       |                     |                                  |   |              |                          |                           |               |  |  |
|                      | AD                 |      |     |      |      | 1    |       |                     |                                  |   |              |                          |                           |               |  |  |
|                      | AE                 |      |     |      |      |      |       |                     |                                  |   |              |                          |                           |               |  |  |
|                      | AF                 |      |     |      |      |      |       |                     |                                  |   |              |                          |                           |               |  |  |
|                      | AG                 |      |     |      |      |      |       |                     |                                  |   |              |                          |                           |               |  |  |
|                      | АН                 |      |     |      |      |      |       |                     |                                  |   | _            |                          |                           |               |  |  |
|                      | ΑI                 |      |     |      |      |      |       |                     |                                  |   |              |                          |                           |               |  |  |
|                      | AJ                 |      |     |      |      |      |       |                     |                                  |   |              |                          |                           |               |  |  |
|                      | AK                 |      |     |      |      |      |       |                     |                                  |   |              |                          |                           |               |  |  |
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|                      |                    |      |     |      |      |      |       |                     |                                  | PATENT OFFICE   |              |                          | YES                       | NO            |  |  |
|                      | AL                 | P    | T/I | JS 9 | 7/2  | 4278 | 8     | 05/27/98            | PCT                              |   |              |                          |                           |               |  |  |
|                      | AM                 |      |     |      |      |      |       |                     |                                  | <del></del>   |              |                          |                           |               |  |  |
|                      | AN                 |      |     |      |      |      |       |                     | ·                                |   |              |                          |                           |               |  |  |
|                      | AO                 |      |     |      |      |      |       |                     |                                  |   |              |                          |                           |               |  |  |
|                      | AP                 | L    |     |      |      |      |       |                     |                                  |   |              |                          |                           |               |  |  |
|                      |                    |      |     |      | от   | HER  | DOCU  | MENTS (Includ       | ding Author, Tit                 | le, Date, Place of Publ   | ication)     |                          |                           |               |  |  |
|                      | ΑQ                 |      | 410 | SIS  | 194  | : GE | EOGRA | PHIC INFORMAT       | TION SYSTEMS, IN                 | STORE, an information s<br>TERNATIONAL WORKSHOP ON<br>94, Berlin, Springer-Ve | ADVANCED RES | EARCH IN GEO             | GRAPHIC                   | -             |  |  |
| -                    | AR                 |      | +10 |      | ÀL I | OF ( |       |                     |                                  | nsional spatial informa<br>Jan-Mar 1989, UK, vol.                             |              |                          |                           |               |  |  |

EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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EXAMINER

XP000258538

Raafat, Hazem M. "An extended relational database for remotely sensed image data management within GIS," IEEE TRANSACTIONS ON GEOSCIENCE AND REMOTE SENSING, vol. 29, no. 4, July 1991, New York, pp. 651-655,

DATE CONSIDERED

| Sheet 1 (A) of |  |
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| SUBSTIT   |          | RM P  | TO-      | 144                           | —_<br>9 |      |     |      |                           | NT OF COMMERCE   | ATTY. DOCKET NO.                     |              | SERIAL         | NO.              | A) OI                         |  |  |
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| (MODIFIED) PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE |          |   |          |                               |         |      |     |      |                           | ADEMARK OFFICE   | 08470/007002 09/019,465<br>APPLICANT |              |                |                  |                               |  |  |
|   | /1150    | STA   | remi     | ENT                           | BY      | AP   | PLI | CAN  |                           |                  | George William Celniker              |              |                |                  |                               |  |  |
| (37 CFR   |          |   | ora.     |                               | 100     |      |     | 1166 | cssury,                   |                  | FILING DATE GROUP February 5, 1998   |              |                |                  |                               |  |  |
|   |          |   |          |                               |         |      |     |      |                           | U.S. PATEN       | DOCUMENTS                            |              |                |                  |                               |  |  |
| EXAMINER<br>INITIAL   |          |   | P.       | ATEN                          | T I     | MUM  | BER | -    | ISSUE<br>DATE             | PATENTEE CLAS    |                                      |              | CLASS SUBCLASS |                  | FILING DATE<br>IF APPROPRIATE |  |  |
|   | AA       | 4   | 3        | 3 4 0 9 3 4 07/20/82 Segesman |         |      |     |      |                           |                  |                                      | 364          | 422            | <del></del>      |                               |  |  |
|   | AB       | 4   | 6        | 7                             | 9       | 1    | 7   | 4    | 07/07/87                  | Gelfand          |                                      | 367          | 73             |                  |                               |  |  |
|   | AC       | 4   | 9        | 6                             | 9       | 1    | 3   | 0    | 11/06/90                  | Wason et al.     |                                      | 367          | 73             |                  |                               |  |  |
|   | AD       | 5   | 2        | 1                             | 4       | 6    | 1   | 3    | 05/25/93                  | Esmersoy         |                                      | 367          | 31             |                  |                               |  |  |
|   | AE       | 5   | 3        | 9                             | 4       | 3    | 2   | 5    | 02/28/95                  | Schneider, Jr.   |                                      | 364          | 421            |                  |                               |  |  |
|   | AF       |   |          | 7                             |         |      |     |      |                           |                  |                                      |              |                |                  |                               |  |  |
|   | AG       |   |          |                               |         |      |     |      |                           |                  |                                      |              |                |                  |                               |  |  |
|   | АН       | $\Box$  |          |                               |         |      |     |      |                           |                  |                                      |              |                |                  |                               |  |  |
|   | AI       |   |          |                               |         |      |     |      |                           |                  |                                      |              |                |                  |                               |  |  |
|   | AJ       | П   | ٦        |                               |         |      |     |      |                           |                  |                                      |              |                |                  |                               |  |  |
|   | AK       |   |          | ٦                             |         |      |     |      |                           |                  |                                      |              |                |                  |                               |  |  |
| ·   |          |   |          |                               |         |      |     |      | FOREIGN PA                | TENT OR PUBLISHE | D FOREIGN PATENT APPLICA             | TION         |                |                  |                               |  |  |
|   |          | DOCUMENT NUMBER   |          |                               |         |      |     |      | PUBLICATION<br>DATE       |                  | COUNTRY OR                           | CLASS        | SUBCLASS       | TRANSI           | ATION                         |  |  |
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|   | AL       | 0   | 299      | 86                            | 2 A     | .2   |     |      | 01/18/87                  | Europe           |                                      |              |                |                  |                               |  |  |
|   | AM       | GB  | 23       | 007                           | 36      | A    |     |      | 11/13/96                  | United Kingdom   |                                      |              |                |                  |                               |  |  |
|   | AN       | GB  | 23       | 095                           | 62      | A    |     |      | 07/30/97                  | United Kingdom   |                                      |              |                |                  |                               |  |  |
|   | AO       | PC  | T/U      | S 9                           | 7/2     | 427  | 9   |      | 06/24/98                  | PCT              |                                      |              |                |                  |                               |  |  |
|   | AP       |   |          |                               |         |      |     |      |                           |                  |                                      |              |                |                  |                               |  |  |
|   |          |   |          |                               | ОТ      | HER  | DO  | CUM  | ENTS (Includ              | ling Author, Tit | le, Date, Place of Publi             | cation)      |                |                  |                               |  |  |
|   | ,,       |   | J        | esp                           | ers     | on,  | s.  | к.,  | et al., "Mo               | odeling of Recei | ved Signals from Interfa             | ces of Arbit | rary Geometr   | y", <u>199</u> 5 | IEEE                          |  |  |
|   | AQ       | Jesperson, S.K., et al., "Modeling of Received Signals from Interfaces of Arbitrary Geometry", 1995 IEEE Ultrasonics Symposium, published July 11, 1995, pp. 1561-1565. |          |                               |         |      |     |      |                           |                  |                                      |              |                |                  |                               |  |  |
|   | ļ        |   | ⊔        |                               |         |      | _   |      |                           |                  |                                      |              |                |                  |                               |  |  |
|   |          |   | <u> </u> |                               |         |      | =   |      |                           | <del></del>      |                                      |              |                |                  |                               |  |  |
|   | AR       |   | <u></u>  |                               |         |      |     |      |                           |                  |                                      |              |                |                  |                               |  |  |
|   | AR<br>AS |   | <u>u</u> |                               |         |      |     |      |                           |                  |                                      |              |                |                  |                               |  |  |
| EXAMINE   | AS       |   | <u>U</u> |                               |         |      |     |      |                           |                  | DATE CONSIDERED                      |              |                |                  |                               |  |  |
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Substitute Disclosure Form (PTO-1449)

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| SUBSTITUTE FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE |                       |                    |       |      |            |      |             |        |               |                  | ATTY. DOCKET NO. 08470/007002         | SERIAL NO.<br>09/019,465               |                      |  |              |  |  |
|--|-----------------------|--------------------|-------|------|------------|------|-------------|--------|---------------|------------------|---------------------------------------|--|----------------------|--|--------------|--|--|
|  |                       | INF<br>STA         | TEM   | ENT  | BY         | AP   | PLI         | CAN'   | r             |                  | APPLICANT<br>George William Celniker  |  |                      |  |              |  |  |
| (37 CFR  |                       |                    | эга.  | ı sı | 1ee1       | ES.  | 11 1        | nece   | essary)       |                  | FILING DATE GROUP February 5, 1998    |  |                      |  |              |  |  |
|  | U.S. PATENT DOCUMENTS |                    |       |      |            |      |             |        |               |                  | <del></del>                           | ······································ |                      | ······································ |              |  |  |
| EXAMINER<br>INITIAL  |                       | PATENT NUMBER DATE |       |      |            |      |             |        |               |                  | PATENTEE                              | SUBCLASS                               |                      | DATE<br>ROPRIATE                       |              |  |  |
|  | AA                    | 4                  | 9     | 2    | 2          | 2    | 5           | 4      | 05/01/90      | Schuessler et    | al.                                   |  |                      |  |              |  |  |
|  | AB                    | 5                  | 3     | 5    | 5          | 0    | 8           | 8      | 10/11/94      | Howard, Jr.      | · · · · · · · · · · · · · · · · · · · | 324                                    | 339                  |  | <del></del>  |  |  |
|  | AC                    | 5                  | 5     | 5    | 3          | 4    | 9           | 2      | 09/10/96      | Barrett et al    | ·                                     | 73                                     | 152                  | <b></b> -                              |              |  |  |
|  | AD                    | 5                  | 6     | 4    | 7          | 0    | 5           | 8      | 07/08/97      | Agrawal et al    |                                       | 395                                    | 601                  | <b> </b>                               | <del>-</del> |  |  |
|  | AE                    | 5                  | 6     | 8    | 2          | 3    | 3           | 0      | 10/28/97      | Seaman et al.    | <del></del>                           | 364                                    | 551                  | ļ                                      | <del></del>  |  |  |
|  | AF                    | 4                  | 8     | 2    | 1          | 2    | 1           | 4      | 04/11/89      | Sederberg        | <del></del>                           | 364                                    | 522                  | ļ                                      |              |  |  |
|  | AG                    |                    |       |      |            |      |             | -      |               |                  | <del> </del>                          | <b> </b>                               | <del> </del>         | <del> </del>                           | ·            |  |  |
|  | AH                    |                    |       |      |            |      | -           |        |               | <del></del>      | <del></del>                           | <del> </del>                           | <del> </del>         | <del></del>                            |              |  |  |
|  | AI                    |                    |       |      |            |      |             |        |               |                  |                                       | f                                      | <b> </b>             | <u> </u>                               | <del></del>  |  |  |
|  | AJ                    |                    |       |      |            | -    |             |        |               |                  | <del></del>                           | <del> </del>                           | <u> </u>             |  |              |  |  |
|  | AK                    | Н                  | _     |      | _          |      |             | -      |               | <u> </u>         |                                       | <del> </del>                           | <del> </del>         |  | <del></del>  |  |  |
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|  | <u> </u>              |                    |       |      |            |      |             | $\neg$ | PUBLICATION   | <del></del>      |                                       | 1                                      | J                    | TRANSI                                 | ATION        |  |  |
|  |                       | 1                  | oct   | MEN  | TN         | IUME | BER         |        | DATE          |                  | COUNTRY OR<br>PATENT OFFICE           | CLASS                                  | SUBCLASS             | YES                                    | NO           |  |  |
|  | AL                    | WC                 | 91    | /04  | 544        |      |             |        | 04/04/91      | PCT              |                                       | 15                                     | 72                   |  |              |  |  |
|  | AM                    |                    |       |      |            |      |             |        |               |                  |                                       |  |                      |  |              |  |  |
|  | AN                    |                    |       |      |            |      |             |        |               |                  |                                       |  |                      |  |              |  |  |
|  | AO                    |                    |       |      |            |      |             |        |               |                  |                                       |  |                      |  |              |  |  |
|  | AP                    |                    |       |      |            |      |             |        |               |                  |                                       |  |                      |  |              |  |  |
|  |                       | <del></del>        |       |      | ro         | HEF  | R DO        | CUM    | ŒNTS (Includ  | ling Author, Tit | le, Date, Place of Publica            | tion)                                  |                      |  |              |  |  |
|  | 70                    |                    | E     | ene  | dik        | tss  | son,        | J.     | A., et al.,   | "Classification  | and Feature Extraction of             | AVIRIS Da                              | ta", <u>IEEE T</u> i | ransactio                              | ons on       |  |  |
|  | AQ                    |                    | 9     | eos  | cie        | nce  | e ar        | d F    | Remote Sensir | ng, Vol. 33, iss | s. 5, Sept. 1995, pp. 1194-           | 1205.                                  | •                    |  |              |  |  |
|  | N.F.                  |                    | E     | row  | m,         | Р.,  | , "0        | :o11   | ection and (  | Quality Control  | of Marine Geological Data             | by the Oce                             | an Drilling          | Program*                               | ,            |  |  |
|  | AR                    |                    | 2     | сеа  | ns         | '88  | 3: <i>F</i> | \ Pa   | rtnership of  | Marine Interes   | sts, 1988, pp. 1012-1017.             |  |                      |  |              |  |  |
|  | 7.0                   |                    | I     | uff  | , E        | 3.L. | ., е        | t a    | al., "Applica | ations of Object | -Oriented Approaches to Ex            | pert Syste                             | ms in the Ea         | arth Scie                              | nces",       |  |  |
|  | AS                    |                    | Ī     | eve  | lor        | inc  | ar          | d M    | Managing Expe | ert System Prog  | cams, 1991, pp. 160-165.              | · · · · · · · · · · · · · · · · · · ·  |                      |  |              |  |  |
| EXAMIN   | ER                    | •                  |       |      |            |      |             |        |               |                  | DATE CONSIDERED                       |  |                      |  |              |  |  |
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|----------------------|-----|--|---------------|--------|------------------|---------|--------------|---------------|--------------------------------|--------------------------------------|---------------------|----------------|-------------------------------|-------------|--|
| SUBSTITU<br>(MODIFIE |     | M P  | TO-           | 1449   | •                |         |              |               | T OF COMMERCE<br>DEMARK OFFICE | ATTY. DOCKET NO. 08470/007002        | SERIAL 1<br>09/019, |                |                               |             |  |
| ·                    |     | STA  | TEM           | ENT    | BY A             | APPL    | OSUR<br>ICAN | T             |                                | APPLICANT<br>George William Celniker |                     |                |                               |             |  |
| (37 CFR              |     |  | era           | i si   | ieet:            | 3 1E    | nec          | essary)       |                                | FILING DATE<br>February 5, 1998      | GROUP               | GROUP          |                               |             |  |
|                      |     |  |               |        |                  |         |              |               | U.S. PATEN                     | I DOCUMENTS                          |                     |                |                               |             |  |
| XAMINER<br>INITIAL   |     | I  | PATENT NUMBER |        |                  |         | R            | ISSUE<br>DATE |                                | PATENTEE                             | CLASS               | CLASS SUBCLASS | FILING DATE<br>IF APPROPRIATE |             |  |
|                      | BA  |  |               |        |                  | Т       |              |               |                                |                                      |                     |                |                               |             |  |
|                      | BB  | L  |               |        |                  |         |              |               |                                |                                      |                     |                |                               |             |  |
|                      | BC  |  | Γ             |        |                  |         |              |               |                                |                                      |                     |                |                               |             |  |
|                      | BD  |  |               |        |                  |         |              |               |                                |                                      |                     |                |                               |             |  |
|                      | BE  |  |               |        |                  |         | $\mathbb{L}$ |               |                                | •                                    |                     |                |                               |             |  |
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|                      | BQ  |  | 1             | Roel   | ofs,             | L.      | н.,          | et al., "Appl | ying Semantic I                | Data Modeling Techniques             | o Large Mas         | s Storage S    | ystem Des                     | signs",     |  |
|                      |     | _  | 4             |        |                  |         |              |               |                                | sium, 1990, pp. 65-76.               |                     |                |                               |             |  |
|                      | BR  | Starks, S.A., et al., "Navigating Large Databases Using a New High-Level Computer Language |               |        |                  |         |              |               |                                |                                      | er Language         | , North        | on/95                         |             |  |
|                      | ~   | - F  |               | 1995   | , pr             | . 4     | 9-54         | •             |                                |                                      |                     |                |                               |             |  |

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Young, J.A., et al., "A Computer-Aided Geological Interpretation System for Subsurface Imaging", Geoscience

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and Remote Sensing, 1994 Symposium, pp. 854-856.

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